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EXAMINER

LAMBRECHT, CHRISTOPHER M

ART UNIT

PAPER NUMBER

2611

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/826,189	<b>Applicant(s)</b> DOLGONOS ET AL.	
	<b>Examiner</b> Christopher M. Lambrecht	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/14/04; 6/18/01</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1, 6-10, and 19-21** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,377,782 to Bishop et al. (hereinafter “Bishop”).

Regarding **claim 1**, Bishop discloses a communication system (fig. 1) for providing wireless Internet signals (see col. 8, l. 66 - col. 9, l. 1 and col. 2, ll. 1-8) to a group of mobile subscribers (col. 9, ll. 4-14), comprising:

a distribution hub [21] (fig. 1) for receiving Internet signals for a plurality of subscribers from the Internet (col. 7, ll. 55-60), and a plurality of video signals from a source (col. 6, ll. 29-34), and transmitting the Internet and video signals over a wired cable TV plant [2] (fig. 1, col. 8, ll. 32-37);

a plurality of antenna nodes [6] (fig. 1) coupled to the distribution hub [21] by the cable plant [2] (fig. 1), each of the antenna nodes [6] including a cable plant interface [714] adapted to receive the Internet signals via the cable plant [2] (fig. 7, col. 15, ll. 9-13), and a multi-carrier modulator [742] (fig. 7) adapted to modulate the Internet signals onto multiple carriers for wireless transmission to the plurality of subscribers (col. 16, ll. 11-19).

Regarding **claim 6**, Bishop discloses a communications system according to claim 1 wherein the antenna nodes [6] are configured to receive wireless signals from a plurality of subscribers (col. 9, ll. 52-60) and relay the subscriber signals over the cable plant [2] to the distribution hub [21], the distribution

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hub [21] being configured to receive the subscriber signals from the cable plant [2] and transmit them to the Internet (col. 13, ll. 54-57, col. 14, ll. 7-16, and col. 14, ll. 19-26).

Regarding claim 7, Bishop discloses a communication system according to claim 1 wherein the wired cable plant [2] includes a coaxial portion (col. 8, ll. 33-37).

Regarding claim 8, Bishop discloses a communication system according to claim 7 wherein the antenna nodes [6] are connected to the coaxial portion (col. 8, ll. 37-41).

Regarding claim 9, Bishop discloses a communication system according to claim 1 including a plurality of cable plant to wireless transverters [6] coupled to the distribution hub [21] by the cable plant [2], each of the wireless transverters being configured to receive video signals from the cable plant [2] (col. 15, ll. 9-13) and convert the received video signals into multi-carrier modulated signals (col. 16, ll. 11-19) for wireless transmission to subscribers (col. 19, ll. 1-14).

Regarding claim 10, Bishop discloses a communication system for broadcasting television signals to a group of mobile subscribers (col. 9, ll. 1-14), comprising:

a distribution hub [21] (fig. 1) configured to receive television signals from a network and transmit the subscriber signals over a cable plant [2] (fig. 1, col. 8, ll. 33-41);

a cable plant [2] connected to the distribution hub [21] for transmitting the television signals from the distribution hub [21] to a plurality of remote locations (col. 9, ll. 1-14), the cable plant [2] including at least one coaxial cable network (col. 8, ll. 33-37);

a plurality of cable/wireless television transverters [6] (fig. 1) connected at remote locations (see fig. 1) to the coaxial cable network (col. 8, ll. 37-41), the transverters [6] being configured to receive

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television signals transmitted over the cable plant [2] from the distribution hub [21] (col. 15, ll. 9-13), convert the television signals into a format suitable for wireless transmission (col. 16, ll. 5-8), and transmit the converted television signals over the wireless paths to a plurality of mobile subscriber units [1,71] (fig. 1, col. 9, ll. 5-14); and

a plurality of mobile subscriber units [1,71] configured to receive the converted television signals (col. 9, ll. 5-14).

Regarding **claim 19**, Bishop discloses a method for providing wireless internet signals to a group of mobile subscriber units [1,71] (fig. 1, see col. 8, l. 66 - col. 9, l. 1 and col. 2, ll. 1-8), comprising:

(a) providing downstream Internet signals addressed for a plurality of mobile subscribers units [1,71] to a distribution hub [21] (fig. 1, col. 7, ll. 55-60 and col. 8, ll. 32-37);

(b) formatting the Internet signals into a transmission format suitable for transmission over a wired cable television network [2] (fig. 1, where the network provides internet access, col. 2, ll. 1-7, provided by headend 21 via cable plant 2, the signals are inherently formatted in a format suitable for transmission over a wired cable television network) and transmitting the formatted Internet signals over the cable television network [2] to a plurality of antenna nodes [6] (fig. 1) connected throughout the wired cable television network [2] (col. 9, ll. 4-14);

(c) at the antenna nodes [6], converting the formatted Internet signals into multi-carrier modulated signals (col. 16, ll. 5-19) and transmitting the multi-carrier modulated signals over-the-air to the plurality of subscriber units [1,71] (col. 16, ll. 24-27).

Regarding **claim 20**, Bishop discloses the method of claim 19 including:

(d) at each subscriber unit [1,71], demodulating the multi-carrier modulated signals (col. 17, ll. 58-66) and outputting the Internet signals addressed to that subscriber unit (col. 18, ll. 38-42).

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Regarding claim 21, Bishop discloses the method of claim 20 including transmitting the uplink Internet signals from the subscriber units [1,71] to the distribution hub [21] for routing to the Internet (col. 14, ll. 7-16).

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3, 11, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop in view of Flint et al., "The CABSINET Project: A Flexible Cellular Broadband Architecture" © 1998 IEEE (hereinafter "Flint").

Regarding claims 2 and 22, Bishop discloses a communications system according to claims 1 and 20, but fails to disclose the multi-carrier modulator includes an orthogonal frequency division multiplexer, the multi-carrier modulated Internet signals being orthogonal frequency division multiplexed (OFDM) signals.

In an analogous art, Flint discloses a communications system comprising an orthogonal frequency division multiplexer for orthogonal frequency division multiplexing Internet signals, for the purpose of combating difficult conditions such as multipath (p. 151, left column, ¶1).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop to include an orthogonal frequency division multiplexer, the multi-carrier modulated Internet signals being orthogonal frequency division multiplexed (OFDM) signals, as taught by Flint, for the purpose of combating difficult conditions such as multipath.

Regarding claim 3, Bishop and Flint together disclose a communications system according to claim 2 wherein the Internet signals transmitted over the wired cable plant [2] are QAM modulated signals placed on RF carrier frequencies falling substantially with the 50-750 MHz range (Bishop, col. 15, ll. 9-13).

Regarding claim 11, Bishop discloses a communications system according to claim 10, but fails to include the converted television signals include OFDM television signals.

In an analogous art, Flint discloses a communications system wherein converted television signals include OFDM television signals, for the purpose of combating difficult conditions such as multipath (p. 151, left column, ¶1).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop to include the converted television signals include OFDM television signals, as taught by Flint, for the purpose of combating difficult conditions such as multipath.

5. Claims 4, 5, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop and Flint as applied to claim 3 above, and further in view of U.S. Patent No. 5,867,485 to Chambers et al. (supplied by Applicant in the IDS filed 18 June 2001, hereinafter "Chambers").

Regarding claims 4 and 23, Bishop and Flint together disclose a communication system according to claims 3 and 22. In addition, Bishop discloses the Internet signals transmitted over the wired cable plant [2] are QAM modulated signals placed on RF carrier frequencies falling substantially with the 50-750 MHz range (Bishop, col. 15, ll. 9-13). However, they fail to disclose the OFDM symbols are modulated onto RF carrier frequencies falling substantially within the 2500 - 2700 MHz range.

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In an analogous art, Chambers discloses a communications system wherein OFDM symbols (col. 4, ll. 37-43) are modulated onto RF carrier frequencies falling substantially within the 2500 - 2700 MHz range (col. 2, l. 59 - col. 3, l. 9) for the purpose of maximizing flexibility, robustness, and reliability of the system (col. 3, ll. 3-9).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop and Flint to include the OFDM symbols are modulated onto RF carrier frequencies falling substantially within the 2500 - 2700 MHz range, as taught by Chambers, or the purpose of maximizing flexibility, robustness, and reliability of the system.

Regarding claims 5, 12, and 24, Bishop and Flint together disclose a communications system according to claims 2, 11, and 22 but fail are silent with respect to at least some of the antenna nodes [6] are configured to transmit the same signals (e.g., the OFDM signals) at the same time on the same frequencies in overlapping coverage areas.

In an analogous art, Chambers discloses a communications system wherein some antenna nodes are configured to transmit the same signals at the same time on the same frequencies in overlapping coverage areas (col. 7, ll. 28-38), for the purpose of canceling out interference (col. 7, ll. 30-35).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop and Flint to include at least some of the antenna nodes are configured to transmit the same signals at the same time on the same frequencies in overlapping coverage areas, as taught by Chambers, for the purpose of canceling out interference.

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop.

Regarding claim 13, Bishop discloses a communications system according to claim 10, but fails to disclose the converted television signals include 8-VSB television signals.



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Official notice is taken of the fact that it was well known in the art at the time of Applicant's invention to employ 8-VSB modulated television signals for the purpose of maintaining compatibility with ATSC standards.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop to include 8-VSB television signals for the purpose of maintaining compatibility with ATSC standards.

7. Claims 14, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop in view of Chambers.

Regarding claim 14, Bishop discloses a communications system for providing wireless signals from a wide area network (Internet, see col. 8, l. 66 - col. 9, l. 1 and col. 2, ll. 1-8) to a group of mobile subscribers (col. 9, ll. 4-14), comprising:

(a) a distribution hub (splitter illustrated in fig. 1 coupling subscriber tap 67 to headend 21) for (i) receiving, from the wide area network, downstream IP signals (col. 15, ll. 45-48) for a plurality of mobile subscriber units [1,71] (fig. 1) located within a service area and broadcasting the downstream IP signals in a downstream channel over a wired cable TV plant [2] (fig. 1, col. 15, ll. 9-13), and (ii) receiving over the wired cable TV plant [2], from a plurality of antenna nodes, upstream IP signals and routing the upstream IP signals to the wide area network (col. 14, ll. 8-26);

(b) a plurality of antenna nodes [6] (fig. 1) located in the service area and coupled to the distribution hub by the cable plant [2] for (i) receiving the downstream IP signals from the wired cable TV plant [2] (col. 15, ll. 9-13), converting the downstream IP signals into a format suitable for wireless transmission (col. 16, ll. 5-19) and transmitting the converted downstream IP signals over-the-air to the mobile subscriber units [1,71] (col. 16, ll. 24-27), and (ii) receiving upstream IP signals over-the-air from the mobile subscriber units [1,71] (col. 13, ll. 8-31), converting the upstream IP signals into a format

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suitable for transmission over the cable TV plant [2] (col. 14, ll. 10-16) and transmitting the upstream IP signals over the cable TV plant [2] to the distribution hub (col. 14, ll. 19-26) where signals destined for headend 21 from nodes 6 are inherently transmitted to the distribution hub); and

(c) a plurality of mobile subscriber units [1,71] each having a wireless receiver [804] (fig. 8) for receiving over-the-air downstream IP signals transmitted from the antenna nodes [6] (col. 17, ll. 47-54) and a wireless transmitter [844] (fig. 8) for transmitting upstream IP signals to the antenna nodes [6] (col. 19, ll. 5-18).

Bishop is silent with respect to at least some of the antenna nodes [6] acting in a simulcast manner.

In an analogous art, Chambers discloses a communications system wherein at least some of the antenna nodes act in a simulcast manner (col. 7, ll. 28-38), for the purpose of canceling out interference (col. 7, ll. 30-35).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop to include at least some of the antenna nodes acting in a simulcast manner, as taught by Chambers, for the purpose of canceling out interference.

Regarding claim 17, Bishop and Chambers together disclose the communications system of claim 14 wherein the cable TV plant [2] includes a coaxial portion to which at least some of the antenna nodes [6] are connected (Bishop, col. 8, ll. 37-41).

Regarding claim 18, Bishop and Chambers together disclose the communications system of claim 14 including a distribution hub (splitter), having associated therewith a service area and a plurality of antenna nodes for transmitting downstream IP signals to and receiving upstream IP signals from mobile subscriber units located within the service area (see rejection of claim 14), the communication system

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further including a headend [21] (Bishop, fig. 1) coupled to said distribution hub for routing downstream IP signals from the wide area network to the distribution hub (Bishop col. 14, ll. 7-26, where signals transmitted from headend 21 destined for nodes 6 are inherently transmitted to the distribution hub), the headend including a router and a network management system (Bishop, col. 14, ll. 19-26) configured to receive information from the distribution hubs about the location of mobile subscriber units (i.e., IP address data) and to route downstream IP signals addressed to a particular mobile subscriber unit to the distribution hub associated with the service area in which the particular mobile subscriber unit is located (Bishop, col. 14, ll. 19-26).

Bishop and Chambers are silent with respect to a plurality of distribution hubs.

Official notice is taken of the fact that it was well known in the art at the time the invention was made for a cable TV plant to include a plurality of distribution hubs associated with various service areas and to route IP packets from a headend to a particular distribution hub based on location information of a subscriber unit, for the purpose of supporting a broader service area.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop and Chambers to include a plurality of distribution hubs, for the purpose of supporting a broader service area.

8. **Claims 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bishop and Chambers as applied to claim 14 above, and further in view of Flint.

Regarding **claim 15**, Bishop and Chambers together disclose the communications system of claim 14, but fail to disclose the converted downstream IP signals are OFDM signals.

In an analogous art, Flint discloses a communications system wherein converted downstream IP signals include OFDM television signals, for the purpose of combating difficult conditions such as multipath (p. 151, left column, ¶1).

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Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Bishop and Chambers to include the converted downstream IP signals include OFDM television signals, as taught by Flint, for the purpose of combating difficult conditions such as multipath.

Regarding claim 16, Bishop, Chambers, and Flint together disclose the communications system of claim 15 wherein the downstream IP signals broadcast over the cable TV plant are QAM modulated signals placed on an RF carrier frequency falling substantially within the 2500-2700 MHz range (Chambers, col. 4, table 1).

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### *Conclusion*

9. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Lambrecht whose telephone number is (571) 272-7297. The examiner can normally be reached on 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Grant can be reached on (571) 272-7294. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher M Lambrecht  
Examiner  
Art Unit 2611

CML

  
HAI TRAN  
PRIMARY EXAMINER